

# **Micro Control Systems**

APPLICATION NOTE

APP-013-B

## **Removal of Ferrite Bead on MCS-8, MCS-I/O, SI8, SI16 & RO8 Boards**

### **Revision History**

Date	Author	Description
2/26/99	M Singer	Removing ferrite bead connecting the grounds.

## Theory

The ferrite beads were implemented to prevent external noise signals from reaching the ground planes of the MCS-8, MCS-I/O, SI8, SI16, and RO8 boards. However, with the ferrite bead in place, the boards were experiencing a ground plane problem. The ground planes were allowed to become independent of earth ground, which would cause different voltage potentials thus causing unpredictable results. Two of these ferrite beads have been removed in Revision 1.51 and higher on the MCS-8 and MCS-I/O boards, but this last ferrite bead must be removed. This application note deals with Revision 1.53 and lower MCS-8 and MCS-I/Os. This change is standard to all Revision 1.54 and higher MCS-8 and MCS-I/O boards. This change is also standard to the SI8, SI16, and RO8 Revision 1.14 and higher boards, so this change would only need to apply to Revision 1.13 and lower SI8, SI16, and RO8 boards.

## Purpose

The purpose of this application note is to fix the problem of the ground planes having a different voltage potential than earth ground. Refer to the diagrams below when reading the procedure's steps.

### Tools Needed:

- \*Standard or magnetic tip lineman pliers
- \*Diagonal wire cutter
- \*1" paint brush
- \*Vacuum cleaner w/small nozzle tip attachment

### Procedure

- 1.) Turn power off to the unit and remove the board.
- 2.) To crush the ferrite bead, use lineman's pliers to grip entire width of the inductor and crush the ceramic dark gray material. This gray material is very brittle and will easily break away from the metal wire passing through it. Be careful not to break the wire passing through the bead.
- 3.) Brush away all of the loose gray material from the board, making sure there is no loose gray material around the other components.
- 4.) Finish by vacuuming on and around all of the components that are in the area of the inductor that was crushed.

